which is/are produced from the surface of the substrate irradiated with the charged particle beams influence(s) an exposure extent of a pattern which is adjacent to a pattern to be written;

an illumination optical system which adjusts a beam diameter of the charged particle beams so that density of the charged particle beams is uniform;

a character aperture in which an aperture hole is formed in a shape corresponding to a desired pattern to be written;

a first deflector which deflects the charged particle beams by an electrostatic field so that the charged particle beams have a desired sectional shape and travel towards a desired aperture hole and which returns the charged particle beams passing through said aperture hole to an optical axis thereof;

a reducing projecting optical system which forms a multi-pole lens field so that the charged particle beams passing through said character aperture substantially reduce at the same demagnification both in X and Y directions when the optical axis extends in Z directions and form an image on the substrate without forming any crossover between said character aperture and the substrate; and

a second deflector which deflects the charged particle beams passing through said character aperture by means of an electrostatic field to scan the substrate with the charged particle beams.

--21 (New). A charged particle beam exposure system comprising:

a charged particle beam emitting device which generates charged particle beams with which a substrate is irradiated, said charged particle beam emitting device generating the charged particle beams at an accelerating voltage which is lower than

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that at which an influence of a proximity effect occurs, the proximity effect being a phenomenon in which a secondary charged particle and/or a reflected charged particle which is/are produced from the surface of the substrate irradiated with the charged particle beams influence(s) an exposure extent of a pattern which is adjacent to a pattern to be written;

an illumination optical system which adjusts a beam diameter of the charged particle beams so that density of the charged particle beams is uniform;

a character aperture in which an aperture hole is formed in a shape corresponding to a desired pattern to be written;

a first deflector which deflects the charged particle beams by an electrostatic field so that the charged particle beams have a desired sectional shape and travel towards a desired aperture hole and which returns the charged particle beams passing through said aperture hole to an optical axis thereof;

a reducing projecting optical system which forms a multi-pole lens field so that the charged particle beams passing through said character aperture form an image on the substrate without forming any crossover between said character aperture and the substrate; and

a second deflector which deflects the charged particle beams passing through said character aperture by means of an electrostatic field to scan the substrate with the charged particle beams.

22 (New). A charged particle beam exposure system according to claim 21, wherein said reducing projecting optical system includes four multi-pole lenses which are controlled to form first through fourth electrostatic fields so that said first through

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fourth electrostatic fields sequentially form a divergent electrostatic field, a divergent electrostatic field, a convergent electrostatic field, and a divergent electrostatic field in one direction of the X and Y directions and so as to sequentially form a convergent electrostatic field, a convergent electrostatic field, a divergent electrostatic field, and a convergent electrostatic field in the other direction of the X and Y directions.

23 (New). A charged particle beam exposure system comprising:

a charged particle beam emitting device which generates charged particle beams with which a substrate is irradiated, said charged particle beam emitting device generating the charged particle beams at an accelerating voltage which is lower than that at which an influence of a proximity effect occurs, the proximity effect being a phenomenon in which a secondary charged particle and/or a reflected charged particle which is/are produced from the surface of the substrate irradiated with the charged particle beams influence(s) an exposure extent of a pattern which is adjacent to a pattern to be written;

an illumination optical system which adjusts a beam diameter of the charged particle beams so that density of the charged particle beams is uniform;

a character aperture in which an aperture hole is formed in a shape corresponding to a desired pattern to be written;

a first deflector which deflects the charged particle beams by an electrostatic field so that the charged particle beams have a desired sectional shape and travel towards a desired aperture hole and which returns the charged particle beams passing through said aperture hole to an optical axis thereof;

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a reducing projecting optical system which forms a multi-pole lens field so that the charged particle beams passing through said character aperture form an image on the substrate without forming any crossover between said character aperture and the substrate; and

a second deflector which deflects the charged particle beams passing through said character aperture by means of an electrostatic field in the X directions and the charged particle beams in said Y directions independently to each other to scan the substrate with the charged particle beams.

24 (New). A charged particle beam exposure system comprising:

a charged particle beam emitting device which generates charged particle beams with which a substrate is irradiated, said charged particle beam emitting device generating the charged particle beams at an accelerating voltage which is lower than that at which an influence of a proximity effect occurs, the proximity effect being a phenomenon in which a secondary charged particle and/or a reflected charged particle which is/are produced from the surface of the substrate irradiated with the charged particle beams influence(s) an exposure extent of a pattern which is adjacent to a pattern to be written;

an illumination optical system which adjusts a beam diameter of the charged particle beams so that density of the charged particle beams is uniform;

a character aperture in which an aperture hole is formed in a shape corresponding to a desired pattern to be written;

a first deflector which deflects the charged particle beams by an electrostatic field so that the charged particle beams have a desired sectional shape and travel towards a

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desired aperture hole and which returns the charged particle beams passing through said aperture hole to an optical axis thereof;

a reducing projecting optical system which forms a multi-pole lens field so that the charged particle beams passing through said character aperture substantially reduce at the same demagnification both in X and Y directions when the optical axis extends in Z directions and form an image on the substrate without forming any crossover between said character aperture and the substrate; and

a second deflector which includes an electrostatic deflector and deflects the charged particle beams passing through said character aperture by superimposing the electrostatic field on said multi-pole lens field to scan the substrate with the charged particle beams.

25 (New). A charged particle beam exposure system comprising:

a charged particle beam emitting device which generates charged particle beams with which a substrate is irradiated, said charged particle beam emitting device generating the charged particle beams at an accelerating voltage which is lower than that at which an influence of a proximity effect occurs, the proximity effect being a phenomenon in which a secondary charged particle and/or a reflected charged particle which is/are produced from the surface of the substrate irradiated with the charged particle beams influence(s) an exposure extent of a pattern which is adjacent to a pattern to be written;

an illumination optical system which adjusts a beam diameter of the charged particle beams so that density of the charged particle beams is uniform;

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a character aperture in which an aperture hole is formed in a shape corresponding to a desired pattern to be written;

a first deflector which deflects the charged particle beams by an electrostatic field so that the charged particle beams have a desired sectional shape and travel towards a desired aperture hole and which returns the charged particle beams passing through said aperture hole to an optical axis thereof;

a reducing projecting optical system which includes four multi-pole lenses which form a multi-pole lens field, respectively, so that the charged particle beams passing through said character aperture form an image on the substrate without forming any crossover between said character aperture and the substrate, said multi-pole lenses being controlled to form first through fourth electrostatic fields to sequentially form a divergent electrostatic field, a divergent electrostatic field, a convergent electrostatic field, and a divergent electrostatic field in the X directions and to sequentially form a convergent electrostatic field, a convergent electrostatic field, a divergent electrostatic field, and a convergent electrostatic field in the Y directions; and

a second deflector which includes a first main deflector and a second main deflector and which deflects the charged particle beams passing through said character aperture independently in said X and Y directions to scan the substrate with the charged particle beams by deflecting the charged particle beams in the X directions by a first main deflection field formed by said first main deflector and a second main deflection field formed by said second main deflector and deflecting the charged particle beams in the Y directions by said second main deflection field, said first main deflector being provided between said second multi-pole lens and said third multi-pole lens, and said

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